

LIBERTY

DRILLING COMPANY

MUNICIPAL
INDUSTRIAL
DOMESTIC
IRRIGATION

WELLS

LICENSED, BONDED AND INSURED

3850 HIGHWAY 93 SOUTH
PH. 755-5544
KALISPELL, MONTANA 59901

September 30, 1968

Engineering Department
Anaconda Aluminum Co.
Columbia Falls, MontanaRe: Order No. C.F. - 5746
EDR - A - 10630
Water Well # 8WELL LOG

Location: East of New Rod Mill.

Formations Log:

0 - 17 Loose fill. Gravel, cobblestones and boulders,
 17 - 29 Concrete, boulders and steel.
 29 - 34 Loose gravel, cobblestones and boulders.
 34 - 59 Coarse gravel and cobblestones mixed in tan silt.
 59 - 78 Fine brown silty sand.
 78 - 81 Fine brown sand mixed with fine to coarse gravel.
 81 - 87 Fine to coarse brown silty sand.
 87 - 131 Fine brown sand mixed in tan silt.
 131 - 169 Fine gray sand and tan sandy clay in thin alternate layers.
 169 - 221 Fine gray muddy sand.
 221 - 246 Tan clay.
 246 - 263 Tan sandy clay with a few scattered gravels mixed in.
 263 - 268 Gravel, cobblestones and boulders imbedded in tan clay.
 268 - 276 Cobblestones and boulders mixed in fine tan and gray sand.
 Some water 2 to 3 gallons per minute.
 276 - 284 Fine gray muddy sand.
 284 - 304 Gray sandy clay.
 304 - 305 Fine to coarse brown sand and fine to coarse gravel.
 Some water. Raised to 74 feet from surface.
 305 - 316 Tan clay with some gravel and broken rock mixed in.
 316 - 338 Coarse blue-gray gravel, some sand, thin seams of tan clay.
 Water raises to 99 feet from surface. Bailed well clean
 every two feet as we drilled through this strata. Pumped
 eight inch test hole at 270 gallons per minute at 335 feet.
 338 - 341 Cobblestones and boulders imbedded in gray clay.
 341 - 352 Gravel imbedded in tan clay.

Casing Log:

Well cased from two feet above surface to 310 feet with 18 inch
 OD by .375 Wall Black Steel Water Well Casing. A forged steel drive

Liberty Drilling Co.
Highway 93 South
Calispell, Montana 59901

Engineering Department:

shoe is welded to the bottom of the eighteen inch casing.

Screening Log:

An eighteen inch Telescope Size, Extra Strength, Stainless Steel Johnson well screen is set from 310 feet to 338 feet with 150/1000 slot opening from 312 feet to 338 feet and 100/1000 slot opening from 318 feet to 322 feet. A tail pipe welded to screen extends from 338 feet to 346 feet, a forged steel drive shoe 16 inch OD by 13 3/8 inch ID by one foot long is welded to the tail pipe and extends from 346 feet to 47 feet. A 16 inch OD flush tube extension is welded to the top of the screen and extends from 318 feet to 303 feet. The top of the flush tube extension is solidly swaged to the inside of the eighteen inch casing at 303 feet.

Water Log:

Well will produce approximately 140,000 gallons of water at pumping rates of 350 to 400 gallons per minute. Then water drops off to a constant flow of 205 gallons per minute with a total draw-down of 287 feet from surface. After well is pumped down (8 to 12 hours pumping at these rates), it recovers very slowly taking sixty hours to come back to full static level. This indicates a limited aquifer or an aquifer with a negative boundry. Static water level of well in rested condition is 99 feet from surface.